Collected Posters from the Nectar Annual General Meeting


Cite as:


Grouplab Nectar Posters. Research report 2007-887-39, Department of Computer Science, University of Calgary, Calgary, Alberta, Canada T2N 1N4

This report collects eight posters produced by students and associates of the Grouplab Research Group (Dept. Computer Science, University of Calgary) for the NSERC Nectar Annual General Meeting, held after the ACM CSCW Conference in November, 2006, Banff.

1. Diaz-Marino, R. and Greenberg, S.
   Cambience: Constructing a Sonic Ecology for Media Spaces

2. Elliot, K., Neustaedter, C. and Greenberg, S.
   The Value of Contextual Locations in the Home

3. Marquardt, N. and Greenberg, S.
   Shared Phidgets: A developer's toolkit for rapid prototyping of distributed tangible user interfaces

4. McEwan, G. and Greenberg, S.
   Community Bar

5. Neustaedter, C., Brush, A.J. and Greenberg, S.
   LINC: A Digital Family Calendar

   Timeline: Video Traces for Awareness

7. Smale, S. and Greenberg, S.
   Transient Life: Collecting and Sharing Personal Information

8. Tee, K., Greenberg, S. and Gutwin, C.
   Screen Sharing with Community Bar
Constructing a Sonic Ecology for Media Spaces

Local Camera
Captures a Nearby Scene

Monitoring Regions
Drawn over Camera Image

Change Detection
Performed on Camera Scene

Visual Programming
Using Input from Regions

Audio Properties
Mapped from Visual Input

Local Speakers
Output a Sonic Ecology

Multiple Instances of
Cambience
Multiple instances of Cambience can be connected to share their regions.
The Region Pool shows all local and remote regions that can be used in the Visual Programming Environment.

Remote Cameras
Capture Remote Scenes

Remote Regions
Broadcast Change Measurements

A Sonic Ecology is produced by mixing sounds together. The change measurements from regions can be used to affect the playback and properties of the sounds. Alterations in the sound give an awareness of visual change.

Download Cambience and the Cambience SFX Library at
http://grouplab.cpsc.ucalgary.ca/cookbook

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The Value of Contextual Locations in the Home

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Every home has a set of locations that people use for information management. In fact, the location of a message provides household members with contextual information about it. This meta-data includes **time**, **ownership** and **awareness** information. These **Contextual Locations** establish their meaning over time through knowledge of routines, household traffic patterns and their proximity to technology.

Contextual Locations allow information to be seen at the right **time**, whether it is urgent, important right now, old, new or stored. Locations also help people establish **ownership** over information, to know whether it is public, personal or private. This ownership may vary over time with the usage of space. It also implies responsibility for any actions to be taken on that message. Finally, locations help household members maintain **awareness** of each others’ presence and activities, and even help them subtly monitor each other, ensuring that the household functions smoothly.

**Space in the home is interwoven with time, ownership and awareness**
Shared Phidgets

A developers’ toolkit for rapid prototyping of distributed tangible user interfaces.

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1 Introduction: What are Phidgets?

Phidgets are hardware building blocks to create tangible interfaces:

- Interface Kit + Sensors
- Servo Motor
- RFID Reader
- Text Display

They can for example ...

- ... provide buttons/sliders for interaction
- ... move objects
- ... identify objects
- ... display messages

2 Motivation: Why do we need this toolkit?

The objective: Build interactive systems that involve multiple locations and various input/output devices

The problems:

- Access to hardware very difficult
- Network programming is a pain
- Synchronizing software and hardware
- Often difficult to get overview of devices

3 Solution: What does Shared Phidgets provide?

- Easy to use API
- Manages all networking aspects
- Custom ‘abstract devices’
- Graphical ‘skins’
- Observer and control tools
- Metadata
- Many different sensors and actuators

4 Implementation: How does it work?

Development using the Shared Phidgets .NET Component Library

5 Tools

- Device Explorer: See all connected devices, control them, and simulate devices
- Sensor Maps: Visualization of all devices and sensors around you
- Mobile Explorer: Use your TabletPC to explore embedded devices in the environment

6 Summary

“The Shared Phidgets toolkit makes it very easy to develop distributed physical and tangible user interfaces.”

Download and Tutorials: http://grouplab.cpsc.ucalgary.ca/cookbook
Peripheral display of **awareness** information with quick and easy transition to **interaction**.

**Ad hoc Groups**

- **Create and Join Places**
  - Create new groups using a single text entry.

- **Join and Leave groups using the checkboxes**

- **Invite other people to your new group**

**Focus control**

Each person can control how they view items within the Community Bar

- **Colour change** shows online/away
- **View name only**
- **View name and text message**
- **View name, static image and text message**
- **View name, video snapshot and text message**

**Presence control**

Each person can control how others can view them within each Place

- **Colour change** shows online/away
- **Name only**
- **Text message**
- **Online**

**Lightweight transition from awareness to interaction**

- **In the bar**
- **Tooltip Grande**
- **Full view in separate window**

**Download and use Community Bar!**
grouplab.cpsc.ucalgary.ca/cookbook/
LINC: A Digital Family Calendar

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A digital calendar that is as easy to use as a paper calendar and available where families need it: home, work, or on the go.

Design: LINC was designed using a participatory design process involving twenty primary schedulers. Design stages included: low-fidelity paper prototype design sessions, the design of a medium-fidelity digital prototype, and a formative evaluation. Findings guided the design of a high-fidelity prototype of LINC.

Evaluation: Four families were given LINC running on a slate tablet for our month long field study. All adopted LINC and used it extensively as their primary family calendar. They valued the portability of the tablet, the ability to access their calendar from multiple locations, and the ease in which they could personalize their calendar with ink and color.
Timeline is a visualization system allowing rapid exploration of the history of a video stream from a media space.

Video cubism
Visualizations created by sampling and abutting single-pixel columns from the video frames.

Multiple Views
Minute, day, hour, and week lines allow visualization of a long video stream.

Refocus
The visualization can interactively be refocused on different areas of the frame by moving the sampled column.

Replay
The visualization can be used to rapidly replay the recorded video by scrubbing over it.

Refine
Playback in the longer visualization lines is coarse - sections can be selected for finer grain viewing in the shorter lines.

Software at: http://grouplab.ucalgary.ca/cookbook
Transient Life
Collecting and sharing personal information
Stephanie Smale and Saul Greenberg
University of Calgary

A single interface to **collect**, **consolidate** and **publish** personal information and daily tidbits of interest

**Collect**:
- Record personal status information as it changes
  - Mood
  - Location
  - Activity
  - Personal Comments

- Gather information tidbits as they catch your interest
  - Drag and drop web links and photos

- Maintain activity logs and to-do lists
  - Record an activity as it is completed or add to-do items as they come up

- Create blog text entries
  - Compose, add to, and edit a text essay over time

- View a personal history of gathered information
  - See status, links, photos and activities from a previous day

**Consolidate**:
- Publish personal status information to the display name field in MSN Messenger

- Publish blog entries to an exiting blog site such as Blogger

- Generate and send a Today Message
  - Gathering all the information collected throughout the day, a rich, consolidated email is generated for sharing with contacts and collaborators.

- Publish
  - Have collected links automatically posted as a blog entry

**Publish**:
- Publish blog entries to an exiting blog site such as Blogger
  - Or

- Today Message
  - About me today...
    - June 23, 2006
    - Today I...
      - Worked on our paper submission
      - Curtled internet provider
      - Read a few more papers on InfoSec
      - Received my phone in the mail - finally
    - On my to-do list...
      - submit JOC paper
      - send letter to Sue
      - work on Thesis - Chapter 2
      - work on talk Y
    - Links I thought were interesting:
      - JOC 2006
      - What impact can I have?
      - Who's in telecommunications?
      - Who's my boss?
    - Pictures I ran across today:
Screen Sharing helps people maintain awareness of what others are working on.

Community Bar
Groupware supporting awareness and interaction
- Group-based public display
- Always visible
- Transitions from awareness to interaction
- Various channels for communication and information
- Plugin architecture

What the person sharing sees
Each person sharing their screen can control how much others see

What others see
Others can see shared screens in miniature or raise the larger view to see more detail

Moving to interaction
Telepointers can be used to remotely point at an artifact on another’s screen

Initial experiences
Ten co-located and distributed Community Bar users from our research group shared their screens on Community Bar.

They used our tool to:
- maintain awareness of what others were doing
- monitor progress and coordinate joint tasks
- determine when others could be interrupted
- engage in serendipitous collaboration
- project a certain image of themselves

People balanced awareness with privacy by using our built-in privacy protection strategies.